SCHOLASTIC BOWL

Full question set including toss-ups and bonuses.

ROUND 1
SET 2

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Round 1 — Set 2

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May 29, 2024

The following are notes for moderators. Please note that these rules may be overriden by questions when indicated.

On reading

- Where appropriate, pronunciation guides have been provided.

- The moderator is to read each question exactly as written, emphasizing italicized words.

- When a player buzzes in, the moderator is to immediately stop reading.

- The moderator must use a consistent and reasonably slow reading pace. The moderator must also speak intelligibly and loud enough that all players can hear the question in its entirety. Players may stop the moderator at any time to request that the moderator speak louder or more clearly.

On answers

- The moderator is to accept only the answer indicated beneath a question.

- The bolded part of each answer is required to receive points. Other parts are optional.

- Brackets beside answers provide the moderator notes and additional information to assist with scoring (which may override the rules provided on this page).

- Unless the answer is a proper noun, the moderator must accept both singular and plural variants of an answer.

- "prompt": The moderator will say *prompt* or indicate in some other way that additional information is required. The moderator may prompt multiple times on the same question as long as each subsequent answer provides more information than the last and each answer is correct.

- "this/these word(s) only": The answer (or its required parts) must be said in isolation without any modifiers to receive points.

- "equivalent/descriptive answers": The moderator must evaluate whether the response is equiavalent in meaning to the indicated answer and award points accordingly.

- "also accept": The moderator must also accept the indicated secondary answer(s).

On powerplays

- All toss-up questions contain the symbol (*) which indicates the *powerplay* cutoff.

- When a toss-up is answered before the powerplay cutoff, the team which answered receives 15 (instead of 10) points for that toss-up.

- In the event that a player buzzes in before the powerplay cutoff, but the moderator stops reading too late, the powerplay bonus is awarded based on when the player buzzes in, not when the moderator stops reading.

Questions begin on the next page.

1. **MATH**
   These processes are called greedy if they always make the locally optimal choice. Turing machines can execute any of *these* processes. Big O notation is used to describe the time and space complexity of *these* processes. For 10 points, name *these* step-by-step sequences of unambiguous instructions that can be used to perform a computation.
   ANSWER: <u>algorithm</u> [prompt on *program*]

1. **MISCELLANEOUS**
   Name *these* 1990s bands with prominent drummers. For 10 points each,

   A Dave Grohl drummed on hits like *Heart-Shaped Box* and *Smells Like Teen Spirit* for *this* band. He went on to form the Foo Fighters after the suicide of *this* band's lead singer, Kurt Cobain.
   ANSWER: <u>Nirvana</u>

   B Tré Cool replaced John Kiffmeyer in 1990 as *this* band's drummer. He drummed in hits like *Brain Stew*, *American Idiot*, and *Know Your Enemy*.
   ANSWER: <u>Green Day</u>

   C Chad Smith drummed for *this* band since 1988, producing hits such as *Snow*, *Under the Bridge*, and *Californication.*
   ANSWER: <u>Red Hot Chili Peppers</u>

2. **SOCIAL SCIENCE**
   Plato once referred to *these* animals as "the only featherless bipeds with broad, flat nails." A philosophical stance named after *these* animals was pioneered by Petrarch. Friedrich Nietzsche [Neet·shuh] claimed that *these* animals killed God. For 10 points, name *these* animals which were often the subject of Italian Renaissance art like the Mona Lisa.
   ANSWER: <u>human</u>s

2. **SCIENCE**
   In mechanical physics, almost all translation quantities have rotational analogues. Name the following quantities and operations used in rotational mechanics.

   A *This* quantity is the rotational analogue of force. When a force is applied perpendicular to a lever arm, *this* quantity is the force applied multiplied by the lever arm.
   ANSWER: <u>torque</u>

   B Torque is the rotational analogue of force. Therefore, by Newton's Second Law, it is also equal to angular acceleration multiplied by *this* quantity.
   ANSWER: <u>rotational inertia</u> [also accept <u>moment of inertia</u>, <u>angular mass</u>, <u>rotational mass</u>, or <u>second moment of mass</u>]

   C When the force and lever arm vectors are not orthogonal, *this* vector operation must be used to find torque. Unlike the dot product, this operation yields a vector.
   ANSWER: <u>cross</u> product

3.

END OF QUESTION SET

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